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Edited by WILLIAM HUNTING, F.R.C.V.S.

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DISEASES OF ANIMALS IN THE TRANSVAAL.

It is always useful and instructive to know what other countries are doing. Sometimes we get a little encouragement to follow the example of others, and are only discouraged when we look at home and see how we are forced to stand still whilst others progress. When the matter is one of individual action we may each copy or disregard. When the matter is one of Governmental action we can only wish and hope that our rulers and their satelites had eyes to see and ears to hear.

Those of us who see the work or read the reports of Agricultural Departments in Europe, the Colonies, and the United States must often have feelings of contempt and vexation at the position occupied by our own Agricultural Department.

Professor Koch has been employed by the Colony of Rhodesia to investigate Redwater at a fee of £10,000. Mr. Watkins Pitchford has been complimented by the Parliament of Natal upon his work. Mr. D. Hutcheon, of Cape Colony, is valued by the whole of South Africa as an expert who has contributed largely to the progress and wealth of his Colony. Mr. Gilruth in New Zealand has organised a real State Veterinary Department in his Colony and is accepted as a first-rate indispensable adviser. Why is it that in all these new countries progress can be profitably made by using the knowledge of veterinarians? There seems only one reason—that in those countries common sense is permitted to act. Why is it that at home we are always some years behind the high water-mark of veterinary science. Our authorities are not wanting in knowledge and common sense, but they will not move. They must know perfectly well that alteration is needed, and that progress is sure, but they remain quiescent. The explanation is that our State departments are full of clerical men and that our experts of all kinds are used only to suit the interests of their superiors. That our Parliamentary heads of department are merely politicians, playing their game and watching with all their attention the possibilities of promotion. This old country stands still whilst all others are moving guided by the discoveries of science and the inventions of art.

We have before us the Regulations adopted by the Transvaal for the control of Diseases of Animals. Comparison with our own regulations, which had the advantage of a start of thirty years, is enough to make one despair of his country.

The list of diseases scheduled is—

Rinderpest	Anthrax
Pleuro-pneumonia	Glanders
Redwater	Sheep-Scab
Tuberculosis	Swine-Fever
Foot-and-Mouth Disease	Swine-Erysipelas.

The first regulation against these diseases is one preventing the importation of stock from countries in which these diseases are prevalent except under conditions which will protect the home stock—slaughter, quarantine, or tests, such as are afforded by mallein and tuberculin.

The following rules apply to diseased stock in the Colony:—

"26. On the outbreak of any infectious or contagious disease the following Regulations shall be observed:—

The owner or person in charge of the stock affected shall give notice as prescribed in Regulation *eighteen*.

Rinderpest.—(1) Affected cattle and all cattle on adjoining farms shall be inoculated. All cattle inoculated by a duly licensed person shall be branded in such manner as shall be prescribed by the Director. (2) After the thirtieth day of April, 1904, no person shall have or use on any public road any cattle which have not been inoculated against rinderpest and branded in the manner prescribed.

Pleuro-pneumonia.—(1) All cattle suffering from this disease may be killed. If not killed such cattle and any cattle which have been exposed to infection shall be inoculated. (2) The Director may require all cattle in areas adjoining an infected area to be inoculated.

Redwater.—(1) All cattle suffering from this disease and all cattle which have been in contact with them or on the same farm shall, as often as necessary, be dipped to the satisfaction of the Director. (2) At the discretion of the Director washing or spraying may be substituted for dipping.

Tuberculosis.—(1) Cattle suffering from this disease may be killed. (2) All cattle which have been exposed to infection shall be tested with tuberculin at such place and time as may be determined by the Director, and those which prove to be infected may be killed.

Foot-and-Mouth Disease.—All stock suffering from this disease or which may have been exposed to infection may be killed or treated in such manner as the Director may determine.

Anthrax.—(1) All stock suffering from this disease shall be killed. (2) No stock which has been exposed to infection shall be moved without the permission of the Director. (3) The Director may require all stock within an infected area to be inoculated.

Glanders or Farcy.—(1) All animals visibly suffering from this disease shall be killed. (2) All animals which have been exposed to infection shall be tested with mallein, and those which prove to be infected may be killed.

Scab in Sheep and Goats.—All sheep and goats suffering from this disease, or which shall have been exposed to infection, shall be dipped in such manner and as often as the Director may consider necessary.

Swine Fever and Swine Erysipelas.—All pigs suffering from either of these disease or which have been exposed to infection shall be killed."

Tuberculosis and Glanders are provided for as far as science can direct.

Here at home tuberculosis is ignored and glanders played with to the extent that all deaths are registered and the in-contact horses left to spread the disease far and wide without interference.

It is humiliating to find that our veterinary regulations are far behind those of the Transvaal.

PUNCTURE OF THE COLON PER RECTUM. ESERINE.

A month ago, when an average-sized horse for sixty hours had shown all the common signs and symptoms of impaction of the colon with partial "twist," or at least some displacement of that gut; when all the usual laxatives and stimulants, sedatives and anodynes in carefully considered doses, with clysters, fomentation, Smith's enema tube, 2 grs. eserine sulph. straight into the jugular and 1 gr. under the skin, etc., had produced no perceptibly good result, I was very much struck with the fact that when I carried the long slender trocar and canula (18 inches) into the rectum, and through its coats punctured the not very large "bladder of gas," or blown-up portion of colon, on the right (which all along had been pressing the fore part of the rectum downwards, and deflecting it towards the left side of the abdomen) and allowed the imprisoned gas to escape—instantaneous and what proved permanent relief was given to the animal. This farm horse, which for two and a half days and nights had been in severe and continuous pain, pawing and scraping, wandering about his box, backing against the wall and into corners, sitting on his haunches, pulse 80 and upwards, pupils dilated to utmost extent, eyes vacant and glaring, etc., but *with no outward tympanitis worth mentioning*; so soon as the little operation was performed stood stock still, seemed inclined to fall asleep on his feet, knuckled on his forefetlocks from sheer weariness, and was in peace and at rest, strangely enough, at once. I was very pleased on introducing my hand and arm again into the rectum to find that that gut was out of its unnatural position, that the "bladder of gas" was dissipated, that the floating colon with some firm contents which previously I could only feel with the top of the fingers was now well within reach near the brim of the pelvis. I could knead its contents through its coats, only a little smear of blood on my hand from the puncture warned me to refrain.

I was very pleased, too, on my visit six hours after to find my patient quiet and doing well, a large stool behind him. Moderate purgation set in next day, and though rather weak and dismal for a day or two good nursing soon put him right, and he was at light work in ten days.

Such a case suggests a few uncomfortable, unpleasant thoughts. There was, as stated, no general tympanitic state of the abdomen; full it certainly was, but the fullness and enlargement was towards the lower, more dependent parts of the belly; there was no hoven nor blown-up state of the upper flank standing well above the level of the iliac spine—nothing in fact to justify or even suggest puncture through side or flank as usually performed. The distension of part of the colon on the right side, too, as encountered and felt with the hand in the rectum, was not great, the "bladder of gas" was not large. I have felt many others far bigger and more diffused. The case, in fact, was one in which I did not expect that puncture through the rectum would do much, if any good, and I was only induced to try it as a sort of experiment and last resort. And yet, so far as I can judge, in this very unlikely case puncture through the rectum was the turning point, the main factor in the horse's recovery, but for it I fear that horse would have gone where far too many go—down to the knackery. And if in this very unlikely case and some few others the little operation succeeded, why, in the hundred and one and more bad cases of "twist" and "displacement" many of us have seen, was it not performed? Would it have saved fifty? Would it have saved five? Why allow a horse to go on in agony for sixty hours if by a little puncture he can be relieved in half the time, or at once? Should not puncturing of the colon through the rectum be set down as a routine procedure in all such cases, without which on horse should be allowed to die?

At a post-mortem take the cæcum or colon very much distended with gas, puncture it, see how it shrinks and shrivels up. In the living subject in well developed twist or displacement of the bowels in the fully distended state hope of recovery is practically *nil*; in the collapsed or shrunken state there may be a slight chance of resolution. The horse should, of surety, have the benefit of the doubt.

The little operation is easily performed, a slender 18 inch trocar and canula being all that is required; lighting and blowing out till no trace of the long bluish-pink flame can be seen issuing from the canula, when the latter should be carefully withdrawn. In the half-dozen or so cases I have done I have seen no bad effects, have always failed, in fact, afterwards to feel or detect the puncture. Two at least of the horses have gone on for years healthy and well.

When tympanitis, considerable or extreme, is present puncture of the side is naturally resorted to, though even in such cases it is a matter of question whether puncture might not be more readily, and easily, and safely effected through the coats of the rectum than through the thick abdominal muscles. The enormously blown-up portion of the colon can in such cases be felt close to the anus, nothing is easier than to push the trocar into it, and as the gas is given off the long slender canula through the anus would follow the collapse and retraction of the gut.

I may perhaps be permitted to remark that, so far as my experience goes, when, as in our recent and other cases, common outward tympany is almost absent, but per rectum the bulging of the distended colon or cæcum can be readily felt, puncture of these large bowels per rectum should be, and might be with benefit, far more frequently had recourse to.

With the action of eserine sulph. in this and two other somewhat similar cases I was disappointed. On the evening of the second day two grains were very carefully injected into the jugular, the little blood stream through the canula having first shown that the vein had been pierced, but beyond the elevation of the tail, some few puffs of gas, and great rumbling of the bowels, nothing followed. In half-an-hour another grain hypodermically, but with neither increase nor decrease of the horse's pain.

He passed a very bad night and next morning was as before.

Last week, however, in another serious case I had the pleasure of seeing the good effects of the drug very plainly shown. Twenty hours after the case had been taken in hand, when the usual purgatives, anodynes, clysters of all sorts, fomentation etc. were seemingly failing to do any good, and the mare was getting from bad to worse, 1½ grs. eserine sulph. were placed in the jugular. Ten minutes after the mare's uneasiness and pain increased, but up went her tail, a rush of gas followed, the noise in the bowels could be heard some yards away. In half an hour some relief followed, in about an hour two stools, and though somewhat pained during the night she was right in the morning, the injection of the eserine being clearly the turning point. In this case puncture of the colon through the rectum was not indicated—would, in fact, have been difficult to perform in consequence of a peculiar doubling of the floating colon filled with fæces lying somewhat above the rectum and preventing the bulging of the larger portion of the gut from being readily felt.

Eserine has been highly recommended by writers in *The Record* recently. Mr. Rutherford some years ago drew my attention to its good and peculiarly rapid effect when injected into the jugular vein. Apparently, and for good reason, it is most effectual when used at first or at an early stage, and when despatch and time have to be considered (especially at night and with a bad niggardly paying client) there is probably no better and more economical and more beneficial treatment for colic in its first stage than a good dose of eserine under the skin, or into the trachea or jugular vein.

Though Professor Smith's rectum tube and pump has not always succeeded with me, yet of its great use and benefit in these cases of impaction of the larger bowels every one is aware.

C. Cunningham.

Slateford, 28th July.

FRACTURE OF THE CERVICAL VERTEBRÆ IN THE HORSE.

Reading Prof. Hoffmann's notes on the above subject in last week's *Veterinary Record* I thought the following case might be of interest.

On Nov. 10th, 1902, I was called to see a horse that had "a touch of colic at night and got fast" and was unable to rise. His position was that of a cow with milk fever. He was quite unable to move his head from his body on the left side. We tried to straighten it but to no avail, and I wired home for a pair of slings and some chloroform and proceeded to the nearest blacksmith shop to make a temporary splint of iron, that is a flat piece on each side of the neck and a band of iron from each of these over the mane, something after Kundsen's patent.

Prognosis unfavourable, as he seemed quite paralysed beyond the seat of injury which was clearly between the 4th and 5th vertebræ. The exact nature of the lesion I could only guess at, either the body of the vertebræ had broken or the transverse processes on one side had broken, coupled with hæmorrhage or partial luxation of the true joint, as there was evidently pressure on the spinal cord. The owner was quite willing to slaughter or adopt any treatment suggested, and when the chloroform arrived the horse was pulled from the stall and turned round gently, chloroform being administered by an assistant.

I may mention that breathing was natural, pulse 50, temp. 102½. I tried my best to reduce the swelling now on the upper side of the neck, but until I had one man to pull his head forward and another with a rope round the collar seat pulling backwards, it proved unsuccessful. However, I could feel it then giving way and I asked the assistant at the head to help gently and to take away chloroform, and to my surprise it entirely disappeared, but breathing almost altogether stopped and cold water was dashed over him.

In about an hour the splint came in and was well padded with wool on the convex side. The horse seemed much brighter and began to struggle for the first time. The slings were adjusted and he was raised to his feet, only to hang in them quite limp. By this time I had about 15 men there and he was kept on his feet by the men and slings. He soon however regained his equilibrium and stood well in slings unless he was disturbed, when he would become excitable, and fall in the slings, even for about three weeks. The splint was covered over the next day with bandages, and cotton wool was substituted for the wool. Pot. brom. was given internally for the first day, and then pot. iodid. and quinine sulph. for the next fortnight. In about a month he was removed from the slings and on walking him there was but very little sign of the swelling, only the splint had chafed him, and he walked with a rolling gait. He was, however, turned to a loosebox and at the end of January was working every day in the team.

G. Jones Roberts, M.R.C.V.S.

Pwllheli.

ABSTRACTS FROM FOREIGN JOURNALS.

On the Microbe of Distemper.—Canine Pasteurellosis.—By Prof. J. Lignières.

In April, 1900, I published a lengthy memoir entitled: Contribution to the study and classification of the Hæmorrhagic Septicæmias (1). One of the chapters of this work was confined to canine distemper, the microbe of which I discovered and studied its character from a point of view concerning its morphological, biological and pathogenic qualities and also its transformation with a vaccine. A year later Dr. Phisalix in his turn isolated the same microbe in distemper (2). Shortly afterwards MM. Bimes and Sérés of Toulouse, published an excellent article (3) on the typhus of the dog and declared that they, with the assistance of MM. Leclainche and Vallée had also found my coccobacillus.

In his first communication, the microbe isolated by Dr. Phisalix appeared exactly identical to mine: but in the second, it closely resembled it (4). But then, in order to see what difference there was between my microbe and that of Dr. Phisalix, I asked him if he would kindly give me his; but he did not think it his duty to satisfy my desire and so I was obliged to isolate his microbe from the vaccine prepared by Dr. Phisalix.

The comparative study of the two cocco-bacilli proved to me that they are perfectly identical; they are bacilli or cocco-bacilli with movements of translation, do not take Gram, do not form spores and are æro-anæobic. The cultures in bouillon and agar are absolutely identical and gelatine is not liquefied. The odour is characteristic. Milk is neither coagulated nor altered, and its reaction remains normal. There is no culture visible on ordinary potato. Indol is not formed. Würtz's agar is not altered. In the first cultures in peptone bouillon Dr. Phisalix' microbe forms clumps, as I have pointed out in my first communication. After I had rendered Dr. Phisalix' microbe virulent I was successful in discovering that his microbe from a pathological point of view was again identical to mine,

In summary, the microbe that I had declared as the cause of distemper (1900) and that of Dr. Phisalix (1901) are absolutely identical. (Meeting of the Central Society of Veterinary Medicine, Paris, July 9th, 1903.)—(*Recueil de Médecine Vétérinaire*, July 30th, 1903.)

This paper was also read at the Society of Biology on July 4th, 1903, when Dr. Phisalix replied that in 1898 he isolated from the guinea-pig a microbe which resembled that of canine distemper and this lead him to study this latter disease and its microbe. In order to determine the differences between the microbe that he had discovered in the museum and that which M. Lignières attributed to the canine pasteurellosis, he, Dr. Phisalix, asked M. Lignières to supply him with his (Lignières) microbe, but this latter gentleman did not think it wise to satisfy Dr. Phisalix's desire, and the question remained in abeyance.—(*Revue Vétérinaire*, Aug. 1st, 1903.)

PASSAGE OF THE RABIFIC VIRUS THROUGH THE BERKEFELD FILTER.—By MM. REMLINGER and RIFFAT-BEY.

Until now the passage of the rabific virus through any of the filters has not been admitted. The experiments reported in this note demonstrate that it can pass through the Berkefeld filter V which is the most permeable. Of 29 rabbits inoculated with the filtrate thus obtained six became rabid. The results were always negative when the filtrate was obtained by passage through the Chamberland filter F. or the Berkefeld filter W, which is moderately permeable. The possible passage through the filter is an argument in favour of the ultra-microscopic nature of the microbe of rabies, which was the theory advanced by Pasteur in 1882.—(*Société de Biologie, Séance du 13 Juin, 1903*, and *Revue Vétérinaire*, August 1st, 1903.)

H. G.

(1) Laboratoire de l'Association des Hacendados, Imprimerie Coni frères, Buenos Aires, 1900.—*Société Centrale de Médecine Vétérinaire*, Juin, 1900.

(2) Phisalix. Académie des Sciences, Mai 6, 1901.

(3) Bimes and Sérès. *Revue Vétérinaire*, Sept., Oct., Nov., and Dec., 1901.

(4) Académie des sciences, séance du 20 Mai, 1902.

VIRULENT REDWATER IN THE TRANSVAAL

Abstract of Report by the Colonial Veterinary Surgeon, Mr. D. HUTCHEON, M.R.C.V.S.

In submitting a brief report upon the virulent disease of cattle which has been prevalent in certain districts of the Transvaal for some months past, I have much pleasure in stating that I have had the cordial co-operation, and valuable assistance of Dr. Theiler, the Government Bacteriologist, in conducting my enquiries and examinations, and we have consulted together on every point connected with the peculiar character of the disease, and the manner in which it is propagated and spread.

We are perfectly satisfied that this is the same disease which has been prevalent in Rhodesia for many months, and from the information at our disposal, we are also of opinion that it was the same disease that Dr. Koch met with in German East Africa, in 1897, and which he described as redwater, or Texas fever, *vide Agricultural Journal*, vol. xiv. No. 10. p. 658.

Dr. Koch in his report upon the diseases of stock prevalent in the German East African Coast region, dated from Dar-es-Salaam, 15th November, 1897, says:—"A certain percentage of the cattle which die from cattle pests on the East coast of Africa are swept away by the surra disease or tsetse fly, but a far greater percentage succumb to a disease, which in symptoms, condition of the blood, and appearance of the body after death, is so similar to a certain cattle pest known in the United States as Texas fever, and which has been carefully studied by American investigators, that I have no hesitation, despite certain variations in character, in saying that the cattle pest which prevails here is "Texas fever." In examining the animals that had died, I could prove all the changes which American investigators give as peculiarly characteristic of Texas fever. The blood was very thin and had a decidedly yellowish colour. The adipose tissue of the dermis, the muscles and all the organs, apart from being of a highly anæmic character, showed also an unmistakable icteric (jaundiced) colouring. The spleen was greatly enlarged, two or three times as thick as in healthy animals; its substance had a deep brownish red colour and was very soft. The liver, likewise was slightly enlarged, had a yellowish colour, particularly noticeable on the surface where the knife had gone through, the appearance of which was that of a pale yellow marble."

Dr. Koch further refers to the character of the bile in the gall-bladder, like finely chewed grass, and the other lesions all of which correspond exactly with our ordinary redwater. After describing the microscopic appearance of the causal organism of Texas fever, discovered by Drs. Smith and Kilborne, which when fully developed is pear-shaped in form and as a rule two are found in the same red-blood corpuscle, hence it has received the name of *pyrosoma bigeminum*, Dr. Koch says, "in a certain number of the animals examined by me I could trace the developed *pyrosoma bigeminum*. It answered the description given of it by Smith and Kilborne so perfectly that no room for doubt was left regarding the identity of the parasite here found with that discovered in American cattle." . . . . . "I, however, found particularly in the red-blood corpuscles of cases which took a severe form, and rapidly proved fatal, strange forms

resembling miniature staves, so that one might take them to be bacilli. They are frequently slightly curved, and sometimes so strong that they form rings, and in that case look very much like the parasite of tropical malaria. Frequently these little staves are slightly thicker in the centre, they then clearly show a double outline, and assume the form of a willow leaf. Between such forms and the pear-shaped form of the full grown *pyrosoma*, there are a number of intermediate stages, and I have in consequence formed the conviction that the parasites I found are the real first forms of the *pyrosoma*. In the severest cases they are found in extraordinary large quantities; at times so profusely that from 80 to 90 per cent. of all red-blood corpuscles are infested by them. The slower the course of the disease the smaller is the number of the parasites, and the surer one may calculate on finding some pear-shaped ones."

Dr. Koch adds:—"Whether the difference between the results obtained by my researches, and those of the American investigators are caused by inequality of season, or climate, of breed of cattle, or perhaps by the dissimilarity in the method of research, I cannot decide for the time being. As to everything else, I can fully testify to the peculiar character of this disease as has been observed by the American investigators, and also in South Africa, Australia, Italy, the countries round the Danube, etc."

In continuation of his report Dr. Koch says:—"Up to the present time I have been able to determine Texas fever in 35 animals with greater or less abundance of parasites, and in a herd of 58 animals, which have recovered from the disease, I have found 28 head infested with isolated first forms of the parasite. All these animals had been brought to the coast from inland, and had sickened soon after their arrival. The native cattle of the coast district, however, although frequently coming in contact with imported or diseased cattle, look healthy and in good condition. I have thus far not been able in one single case to demonstrate the Texas fever parasite in one head of coast cattle." After referring to the information collected from butchers and other old inhabitants, Dr. Koch adds: It is evident from this that Texas fever has for a long time been endemic on the East African Coast and in the Island of Mafia. Presumably the region where it is endemic includes other East African cattle rearing islands, and stretches besides both north and south across the German Protectorate. Especially towards the South it probably extends to the English Colonies, where Texas fever has been observed since 1870, having been introduced from the North."

I have quoted thus largely from Dr. Koch's report in order to show that the virulent disease of cattle which he met with in the coast districts of German East Africa, and which he described as undoubted redwater or Texas fever, is the same disease which has for some time been prevalent in Rhodesia, and is at the present time prevalent in certain districts of the Transvaal.

In Messrs. Gray and Robertson's report upon Texas fever or redwater in Rhodesia, they state, p. 12, "Our work here completey corroborates the statement of Dr. Koch, that in very acute cases the *pyrosoma* or pear-shaped form of the parasite is generally absent, and the stave or bacillary form is almost invariably present. Out of several hundred cases in which the blood was microscopically examined, in twenty cases only was the typical double *pyrosoma* met with, and then in conjunction with the bacillary and spherical stages." The report continues, "The forms of the parasite met with in this epidemic may be classed as follows:—No. 1. The typical *pyrosoma* single or double, and its modifications, *(a)* the willow leaf form, *(b)* the clove or pin forms, and *(c)* the form where the head of the *pyrosoma* is much distended, seems vacuolated and does not take the stain.

No. 2. The bacillary or rod forms, two or more of these may approximate themselves in such a manner as to take the form of a ring, resembling one of the stages in the life history of the parasite of human malaria.

No. 3. The coccus or spherical form, as many as 11 of these may occupy one red-blood corpuscle—the size ranging from a pin-point up to a spherical body occupying one third of the space of a red-blood corpuscle, clear in the centre and taking the stain at four points in the margin—a very common appearance seen in blood films is two spherical bodies in each red-blood corpuscle."

So much for the microscopic appearances of the blood of cattle which were affected with this virulent form of redwater in Rhodesia, and as I had the opportunity of examining a large number of the specimens prepared by Mr. Robertson, in Rhodesia, and now an equally large number of microscopic specimens of the blood of affected animals in the Transvaal prepared by Dr. Theiler, I have no hesitation in stating that the description of the various forms of the micro-parasite as given by Dr. Koch, Messrs. Robertson and Gray, corresponds exactly with the appearance of the various forms of this parasite as seen in the blood of the cattle which are dying from this virulent form of disease in certain areas of the Transvaal. The symptoms, character of the disease, and the post-mortem lesions are also identical in every detail, I have no hesitation therefore in stating that the disease called Rhodesian redwater, and the disease at present existing in certain areas of the Transvaal are identical in every respect. Unfortunately Dr. Koch in his report does not give any detailed description of the post-mortem lesions which were present in those cases of the disease which he examined in German East Africa. This is very much to be regretted, because a large percentage of the cases of this virulent redwater, both in Rhodesia and in the Transvaal, exhibit post-mortem lesions which diverge considerably from the usual lesions which are met with in the ordinary redwater previously met with in the South African Colonies. In addition to the usual post-mortem appearances of redwater, such as enlargement and a pulpy condition of the spleen, a yellowish or brownish tinge of the fat throughout the body, liver enlarged, more friable than normal, and often of a yellow colour, the gall is generally thickened, and varying in colour from a dirty yellow to a dark grumous green, resembling finely chewed grass. The urine is usually dark coloured, varying in shade from a dark brown sherry to a deep claret. The kidneys are slightly congested, with a little cloudy swelling, and present a brownish hue, due to the colour of the urine passing through them. The fourth stomach is generally congested, and contains a few dark eroded spots on the mucous membrane of the pyloric portion, the small intestines are usually deeply bile stained, especially the upper portion. The large intestines are also very congested, usually about the rectum. Such are the prominent post-mortem lesions of the ordinary redwater.

In this new and more virulent form of the disease, one of the most striking post-mortem appearances, in a large percentage of the cases, is an œdematous condition of the lungs; the trachea, bronchial tubes, and interlobular tissue are filled with a dark straw-coloured fluid. The pericardium or heart bag contains a similar fluid. In many cases the thoracic cavity contains a large quantity of this fluid but it is usually a little darker in colour, A similar exudate is found round the base of the heart, and surrounding the principle lymphatic glands, in the mesentery also, and in other situations where there is an abundance of cellular tissue.

In numerous cases the fourth stomach and small intestines are acutely inflamed, giving rise to the sus-

picion that the disease is complicated with rinderpest. A very marked post-mortem lesion in these virulent cases is the number of infarcts, areas of necrosis—in the liver and kidneys, these are comparatively rarely met with in the ordinary form of of Redwater. It is unnecessary here to attempt any minute description of the post-mortem lesions met with in either the ordinary or the extraordinary form of Redwater; sufficient has been stated to show that this new form of disease manifests certain characters which distinguish it from the ordinary form of Redwater with which the farmers of South Africa have been familiar for thirty years.

In this connection, it may be of some interest to refer briefly to the history of Redwater in the South African Colonies.

Redwater was first observed by Europeans in Natal in 1870 It made its appearance amongst some cattle which were sent to graze near the mouth of the Tugela River. There is clear evidence that it came from the north-east, because the native servants in Natal recognised the disease as one that previously prevailed amongst cattle in Zululand and Swaziland. This testimony agrees with the evidence obtained by Dr. Koch.

After its appearance in Natal, it spread with great rapidity over the greater portion of that Colony, first along the coast districts to Durban, thence along the main lines of traffic. In 1873 it made its appearance at Kokstad, and about the same time reports of the disease came from various centres of the Orange Free State and Transvaal—principally along the transport routes to the diamond fields, which was then the centre to which the bulk of the traffic went.

It will be observed, therefore, that Redwater, was introduced into a large number of centres in the Transvaal in the early seventies, and the stock farmers and the transport riders were only too familiar with its character, as the losses, especially amongst oxen, along the road were very heavy.

With respect to the Cape Colony, the Pondos prevented ox traffic from the infected centres from passing through their territory, and thus for about ten years the disease was prevented from making any rapid progress southwards, until 1883, when the disease was spread through the Transkeian territories, and introduced into the East London and King William's Town districts of the Cape Colony by transport oxen, which were employed to take the Cape Infantry up to Kokstad. On their return journey a number of these oxen died from Redwater, and thereby established numerous centres of infection. As stringent restrictions were imposed during 1883 and 1884, the disease did not make rapid progress through the Kaffrarian districts, but as these restrictions were withdrawn, at the urgent request of the public, at the end of 1884, the disease swept like a wave over the Kaffrarian districts, Peddie, Bathurst, Lower Albany, and into Alexandria during the following summer; while, in the Transkeian Territories, it carried off over 100,000 cattle. But although the disease assumed a virulent form, as it invariably does when it first invades a new territory so favourable to its propagation and spread as the East Coast districts of the Cape Colony are, yet we have no information to lead us to believe that the disease ever assumed the peculiar type of character which it has manifested in Rhodesia and the Transvaal. Further, we have already shown that a large area of the Transvaal was affected with redwater over twenty years ago, and it was a matter of common observation that if fresh cattle, not immune to redwater, were introduced into such areas during the summer months, they were certain to contract the disease, although cattle native to the district remained perfectly healthy. But the experiments recently conducted by Dr. Theiler at Nelspruit, one of the centres infected with this new type of the disease, has clearly shown that cattle that possess a strong immunity against the ordinary redwater, possess no perceptible immunity against this new type of the disease. Dr. Theiler sent down twenty-eight cattle to that station on the 16th January. They consisted of fourteen Texas cattle, four Madagascars, nine common bred cattle from the Cape and the Transvaal, and one ox which had recovered from this virulent disease at Komati Poort. The Texas and Madagascar cattle are known to possess a strong immunity against the ordinary form of redwater, but, in addition, this immunity was strengthened by the injection of large doses of virulent redwater blood. Dr. Theiler will doubtless describe these experiments in detail in his own reports; my object in referring to them is simply to point out that all these cattle died, with the single exception of the ox which came from Komati Poort, clearly indicating that the cattle possessing the strongest immunity against the ordinary redwater, which could be artificially produced, were unable to withstand exposure to the veld which is infected with this new type of disease; their life was not perceptibly prolonged even.

Similar results were experienced in Rhodesia. Messrs. Gray and Robertson in their report state:—"So deadly is this disease that the mortality amongst calves, which generally resist redwater infection"—or contract the disease in a mild form and recover—"has been extreme, animals only a few weeks old developing the disease, while Madagascar cattle, while are usually highly resistant also die, and the salted cattle sent up here by the Natal Government to see whether animals immune to coast infection would withstand the disease, lived only three weeks. Furthermore the few animals which have recovered from the first attack, in many instances developed a second attack, about three months later, which terminated "fatally."

The Appearance of the Disease in the Transvaal.

It is of interest to turn now to the first appearance of this particular form of redwater in the Transvaal. From the evidence which I have been able to obtain, it would appear that the first public notice of this severe form and altered type of redwater occurred at Komati Poort, nearly eight months ago. The disease appeared amongst cattle which were brought there from different centres of the Transvaal and Orange River Colony. At any rate the disease manifested a virulence, and altered type, which caused many experienced men and even some veterinary surgeons, to dispute its identity with redwater. The lesions seen in the stomach and bowels of many of the cases, giving rise to a suspicion that it might be at least complicated with rinderpest. While the œdematous condition of the lungs, and the serous effusions into the serous cavities, and the absence in many of the cases of the coloured urine, made the diagnosis still more difficult. Captain Smith, acting P.V.O. of the S.A.C., however, certified that the disease was redwater, and Dr. Theiler confirmed his diagnosis by microscopic examination, and declared the disease to be the Rhodesian form of redwater, many, however, still maintained that the disease was tsetse, and were prepared to prove their theory by argument if not by fact.

The principal question however, with which we are concerned at the present time is, did this virulent and altered type of redwater originate at Komati Poort, by passing through those susceptible cattle which were sent down there from the high veld about eight months ago, or was the infection conveyed to Komati Poort in the first instance from somewhere else?

In this connection Dr. Theiler's report, *vide The Transvaal Agricultural Journal*, No. 1. vol. 1, p. 37, is of considerable interest, he says:—"In May, 1902, an outbreak of redwater occurred among a herd of forty

cattle belonging to the South African Constabulary, then stationed at Daspoort, which had been imported from the O.R.C. All the animals died except four. The epidemic started with cases of ordinary redwater, and ended with forms similar to the Rhodesian affection. Again the outbreak of redwater among cattle belonging to the Repatriation Board at Komati Poort, showed not only the common forms of redwater, but also the virulent form due to the bacilli-form *pyrosoma*. Nearly all the animals died in this herd also. These observations would certainly support the idea that when the ordinary infection of redwater meets with favourable conditions, and passes through highly susceptible animals it tends, not only to increase in virulence but to become altered in type and character.

There are many facts of a similar nature, well-known to all those who have had a wide and extensive experience of Redwater, which support the same view. For example, we know that cattle which are immune to the infection of Redwater in one district, are not immune to the infection in another where the disease assumes a more virulent form. It is generally recognised that Redwater is much more virulent on the coast districts than it is inland, and the further inland, and the higher the elevation that is reached, the milder does the disease become until it ceases to manifest itself as a permanent infection. In like manner the disease becomes more and more virulent on our Eastern border, the farther north and the nearer to the Equator we get. This has been the experience also in the Unites States, the Argentine Republic, and in Queensland. Heat and moisture being being the conditions which appear to favour the increased potency of the infective agent.

There is another important fact which is deserving of consideration in this connection. After a disease has swept over a district or territory, and all the cattle remaining have acquired an immunity against the local tick infection, either becoming salted after a severe attack, or by gradually acquiring an immunity by being born and constantly reared in the locality, and exposed to the continuous tick infection existing, should no active disease manifest itself in such an infested area for some years, due to the fact that no fresh susceptible cattle have been introduced, it would appear that the strong immunity which these cattle at first possessed, becomes modified, and after some years they are no longer capable of resisting a strong and more virulent form of infection, although still capable of resisting the local infection of their native veld. This is often manifested by the fact that if such cattle are removed to an area in which the disease exists in an active and severe form, they very often contract the infection, and may die, although perfectly safe against the infection on their own veld.

Preventive Measures.

I have already stated that there can be very little doubt that this virulent form of Redwater is propagated and spread by ticks, whether by one or more species, in a manner similar to the way in which the ordinary form of Redwater is spread, hence dipping the infected herds, and removing them at once to clean veld, has been strongly recommended as the best known means of arresting the future spread of the disease in the infected herds. The recommendation was at once acted upon, and is being successfully carried out.

It was evident from the history of the disease that many of those herds became infected while *en route* to the stations where they were sent to graze. In such cases the disease usually appeared in the herd a few days after their arrival. All those which had contracted the infection *en route* manifesting the disease within a limited time of one another, after which there was a cessation of the disease, until the time for the next generation of ticks to hatch out, when it would revive with greater virulence, until all the cattle became infected, the majority of which died.

With respect to the movement of the infected herds to clean veld after dipping, it is of the utmost importance that they should be taken to High Veld, where the temperature during the winter months is sufficiently low to kill any ticks which may be carried away with the infected herd. This precaution would avoid the creation of fresh centres of permanent infection.

Mr. Pound, Director of the Stock Institute of Queensland, experimentally proved that exposure to a temperature of three degree below freezing point killed both mature ticks and larvæ within seven days. It should be noted, however, that when these ticks bury themselves under the surface soil, or vegetation, it would take a lower temperate than three degree below zero to kill them. Still, we know, from practical experience, that, in those districts situated at a certain elevation, where several degrees of frost are experienced for a considerable time during the winter the disease does not become permanent, although it may be repeatedly taken to such localities by infected during cattle the summer months. Nor do the cattle which contract the disease there obtain a permanent immunity against infection, as such immunity can only be maintained by continuous tick infection. It is just because the ticks cannot live in such situations that make them safe centres to which these infected herds can be sent.

The Quarantining of Known Infected Centres.

It is of the greatest importance that all these centres which are known to have become infected with this virulent form of redwater should be proclaimed infected areas, and, as far as possible, all cattle should be removed from them for one year at least. In the case of private property, no fresh susceptible cattle should be allowed to be brought on to it for a like period. Any other class of stock may be allowed to graze on such infected veld, because, as far as is at present known, no class of farm stock, except cattle, contract this disease, nor do they convey the infection, although they may carry the ticks. This is explained by the fact that the progeny of infective ticks which have fed and matured on any other class of stock lose the power of conveying the infective organisms.

Should this new type of disease be discovered to be simply a more intense and virulent form of redwater, arising from specially favourable atmospheric and other conditions, it will most probably lose its extreme virulence gradually, and become more amenable to preventive and curative treatment. But the experience gained of the character of the disease in Rhodesia does not justify us in relying upon that hope ; hence it is of the utmost importance that every effort should be made to arrest the further spread of the disease, or, better still, to eradicate it completely by depriving the ticks of any susceptible animals to feed upon.

With respect to the various dips in use for the destruction of ticks, paraffin oil is one of the most effective dressings, more especially when used as a spray, and the American dynamo oil, which contains a quantity of sulphur in solution, is also most effective as a tick destroyer, but it blisters the skin, and causes a good deal of constitutional disturbance, so that it cannot be recommended either as a spray or as a dip. But another drawback to the use of paraffin oil, in addition to its expense, is the fact that although it acts very promptly on the ticks, it maintains its action but for a very short time ; hence it requires to be repeated at very short intervals to keep the animals free of ticks.

From a large number of dipping experiments conducted in America and Queensland, there is a concensus of opinion, which corresponds with our own experience in South Africa, that an arsenical mixture is the most effective dip for the destruction of ticks yet discovered.

The following is the arsenical dipping mixture which has been for some years employed in Queensland, and more recently in Natal and Rhodesia :—*

6 lbs. Arsenic.
24 „ Soap (common yellow).
24 „ Washing Soda, in Crystals.
5 gall. Stockholm Tar.
400 „ Water.

This dip requires to be boiled for six hours to ensure its proper chemical mixture. Further, it is considered essential that the whole of the dip should be boiled, and used at a temperature of about 100 deg. Fah. It is this necessity for boiling the whole of the mixture which is the greatest drawback to its general use, because there is the initial expenditure in fitting up the boiler tanks, in addition to the erection of the dipping tank ; the labour and fuel required also increases the cost very much. In order to minimise this trouble and expense, Mr. Demuth, a chemist in Cape Town, has prepared a mixture of the same ingredients, with a solvent added which renders it capable of complete solution in cold water. It is under trial here at the present time, and promises to give satisfactory results. Even should it require to be used hot in order to increase it efficacy, it would be much less trouble and expense to boil the quantity of water sufficient to raise the dip to the temperature required, than to have to boil the whole mixture. This mixture has the advantage also of being comparatively cheap.

It ts of importance to note that this Queensland mixture is not only a very effect dip for killiug all the ticks which are in the skin of the animal at the time of dipping, but it maintains its action for a longer period than any other dip in use, still it is marvellous how soon after dipping small larval ticks begin to attach themselves to the dipped animals. We were at first of opinion that it was the soap and the tar which gave the dip its adhesive nature, and thus maintained its action longer. Mr. Lounsbury is of opinion, however, that it is the arsenic which is the most potent agent in the mixture ; still, the tar and soap would help to retain the arsenical compound on the skin.

The point is of considerable practical importance, however, because it shows how difficult it is to keep an animal entirely free from ticks on badly infected veld. The most that anyone can expect to accomplish by dipping or dressing is to prevent the female ticks from maturing on the cattle, and thus prevent them from breeding, until the veld becomes exhausted of young ticks.

Medical Treatment of Redwater.

A immense number of medicine have been experimented with, and empirically administered in the treatment, both preventive and curative, of Redwater, but the main facts which should be kept prominently before us in the rational treatment of this disease are :—(*a*) that the disease is due to a micro-parasite which enters the blood stream and attacks the red-blood corpuscles, causing their rapid destruction, and (*b*) that as a consequence of this rapid destruction of the blood corpuscles, and the removal of their constituents from the blood stream, by the kidneys, liver, and spleen, serious derangement of these organs, and anæmia of the patient quickly ensue. The aim of the practitioner, therefore, should be to administer some strong germicide which would kill, or arrest the development of this casual micro-parasite in the blood, in conjunction with such medicines as would relieve the congestion of the liver, and effect a free discharge from the bowels. And writing from considerable experience of the treatment of Redwater, both personal, and acquired from others, I have no hesitation in stating that the most satisfactory results hitherto observed have been obtained by the administration of strong germicides such as carbolic acid, and the various tar derivatives, such as Jeyes' fluid, Little's, MacDougall's, and other sheep dips, which have a similar action, given in combination with a purgative, such as raw linseed oil, Epsom or Glauber salts and calomel.

After the causal micro-organism of the disease was discovered by Drs. Smith and Kilborne, in 1892, we, acting on the well-known effects which quinine exercises on the organisms of malarial fever, added quinine in one or two drachm doses, and apparently, with much benefit. It is now recommended to increase the dose. Messrs. Gray and Robertson tried liberal intra-muscular doses of acid hydrobromate of quinine, and in some cases it seemed to act fairly well. Dr. Theiler, and some of the veterinary staff of the Department in Pretoria, have also tried large doses of an acid solution of quinine, injected into the dew-lap with favourable results. But although all these medicines appear to act beneficially in the ordinary form of redwater, in severe cases of this new and virulent form of the disease medicinal treatment appears to exercise very little beneficial effect.

In the Cape Colony, experience has shown that when redwater appears amongst a herd of cattle, if carbolic acid is administered daily to the whole herd, it appears to have the effect of greatly modifying the attack, and the disease passes over the herd, with comparatively little mortality. Similar results are obtained by the daily administration of the tar derivative sheep dips.

Inoculation.

Inoculation against the usual form of Texas Fever, or Redwater, has been practised with success in Texas, in Queensland, in Argentina, in the Cape Colony, and elsewhere ; but it has not yet been successfully applied to this new type of the disease which has appeared in Rhodesia and the Transvaal. Still, the fact that animals which have recovered from an attack of this new type of disease, are able to resist exposure to tick infection on badly infected veld, on which all the other exposed animals died, would appear to indicate that a method of inoculation against this virulent type of the disease may be discovered. Dr. Theiler is at present conducting a series of experiments, which it is hoped will throw some additional light on the subject. The distinguished savant, Dr. Koch, is also engaged in the study of this disease, and every stock farmer in the country will wish him success.

In the meantime, it is neccessary to make provision against any serious loss of imported cattle from the ordinary form of Redwater, which exists over a large area of the Transvaal. In fact, fresh imported stock, which are not immune to Redwater, are liable to contract the disease if introduced to almost any part of the low-lying districts of the Transvaal during the summer months.

When introducing valuable breeding cattle into the Transvaal therefore, the following precautions should be taken, *(a)* To import only young animals about a year old ; these usually contract the disease in a much milder form than older cattle, and stand a better chance of recovery. *(b)* Importations of cattle from countries not infected with redwater should be made in the winter, or in early spring only. During these months, except in the low-lying portions of the Eastern border of the Transvaal, where the winter is very mild, active tick infection is in abeyance, and no redwater appears even amongst imported susceptible stock ; *(c)* all imported cattle, thus brought in during the winter or early spring months, should be inoculated and passed through a modified form of the disease before the danger of active tick infection arrives. There is a double advantage in this arrangement. When susceptible cattle

* There are slight variations in the quantities of the minor ingredients, but the different mixtures are essentially the same.

are introduced during the winter months, there is no danger of tick infection, until after the fever produced by inoculation has passed, and as the tick infection comes on gradually in the spring, the inoculated animals get their artificial immunity gradually strengthened by the more feeble tick infection at that period. On the other hand, when cattle are introduced during the summer it is very difficult, even with careful dressing or dipping, to keep them absolutely free from ticks until they have passed through the inoculation fever. And even when they have successfully passed through that critical period you require still to continue your vigilance to prevent many ticks from attaching themselves to these animals for some considerable time, as the tick inoculation in the summer and autumn produces a far more severe form of fever than the artificial inoculation.

There is a further argument in favour of winter or early spring importation and inoculation. During the winter when active tick infection is in abeyance, it is much easier to obtain a suitable salted animal from which to procure the blood for inoculation purposes, than it is during summer or autumn. The blood of salted animals obtained during the period of active gross tick infection, is very often so virulent that it conveys a severe and even fatal form of the disease to the animals inoculated, thereby defeating the object aimed at, which is to convey, as severe a form of redwater fever as is consistent with safety.

The usual method of preventive inoculation against Redwater, is to inject into the susceptible cattle from 1 to 5 c.c. of freshly drawn blood obtained from an animal, (*a*) which has recovered from an attack of the disease at least two months previously, and has since run on infected veld. (*b*) An animal which has been bred and reared on Redwater veld, although it may never have been observed to be visibly affected, and, (*c*) An animal which has been inoculated with salted Redwater blood, and passed through a severe attack in consequence. In the Cape Colony the first method is preferred, but either of the other two methods are equally effective if carried out with proper precautions. It must be clearly understood that whatever method of obtaining blood for inoculation is adopted, it is necessary to test such blood on a few susceptible animals, before bringing it into general use.

Further, as I have already remarked, the blood of a salted ox may and generally does, increase in virulence during the summer and autumn months, corresponding to the increasing virulence of the tick infection, hence it is safer and much less trouble, to inoculate during the early spring. The blood of the salted animals, would, at such a time remain more constant in strength and virulence.

Some discussion has at times arisen respecting the quantity of salted blood to use for inoculations. In our early experiments at the Cape, we were led to consider that it was safer to use a large dose than a small one, but at the present time, 5 c.c. is the quantity mostly used, and it gives satisfactory results generally. It must be noted that no inoculated cattle should be exposed to tick infection until they have completely recovered from the inoculation fever. Further, experience has taught us in order to minimise the loss resulting from inoculation, the following conditions should be observed, viz. :

(1) The cattle must not be travelled long distances either immediately before, or after inoculation.
(2) That cattle in healthy moderate condition withstand the effects of inoculation, better than those which are either in high or low condition.
(3) The cattle should not be knocked about during the operation.
(4) After inoculation the cattle should be placed on the best and most succulent veld, and allowed to remain undisturbed for about six weeks.

THE ROLE OF ANTIFERMENTS IN THE PROTECTION OF INTESTINAL PARASITIC WORMS.

When alchemists were seeking for the universal solvent, a cynic asked, Where is the vessel that will hold it? In the digestive tract we have ferments capable of dissolving, transforming, analysing, and modifying our various foods, and there are also, as are well known, many parasites that live in and thrive in our digestive juices. These juices, although they attack our foods, leave intact the "vessels" or viscera that contain them. The parasitic worms that live in the stomach and intestine, and even in the duct of the pancreas, and which belong chiefly to nematodes, trematodes, cestodes, and acanthocephela, are themselves not attacked by the digestive juices. Cysticerci, the larvæ of tænia, in order to reach the intestine to develop into proglottides, have to pass the stomach, and must therefore be proof against the digestive action of the acid gastric juice. It would appear, however, that only the head and neck resist the digestive action of the gastric juice. Thus, not the whole animal, but only a limited part of it, is "protected." Moreover, it is remarkable that it is protected, as a whole, from the action of proteolytic ferments when it is in the tissues of its original host—for example, the sheep. This resistance is all the more remarkable, as some of these parasites—notably those without a digestive apparatus—have a very delicate outer covering through which the nutrient fluids can pass. Even in nematodes with thick coverings this covering cannot be the protective mantle, for the digestive ferments are taken into the intestines of these worms. The question is closely associated with another, namely, why the stomach and intestine are not digested by their own proteolytic ferments. The various theories—for example, that put forth by Bernard in 1856 as to the protective influence of the epithelium ; of Pavy in 1863, as to the protective influence of the alkalinity of the blood—are not satisfactory. Notably so is this the case in the intestine where the ferment is active in an alkaline medium. In connection with intestinal parasites, the recent researches of Ernst Weinland deal with their relations to the tryptic ferment. We have got a little further than the theory of the "living principle" of John Hunter, set forth in his famous paper in the *Philosophical Transactions* in 1772, although something very akin to it was again suggested by Matthes in 1893 and by Fermi in 1894. J. Frenzel in 1891, in dealing with the digestion of living tissues and intestinal parasites, suggested that the protection was perhaps to be sought in the presence of antiferments. When an appeal is made to experiment and an artificial digest—peptic or tryptic—is made with fibrin and to the mixture is added a few cubic centimetres of the juice expressed from ascaris or tænia and the whole kept at 37° C. under toluol, even after eight days' digestion, the fibrin is practically unaffected. In a control test without ascaris juice the fibrin was completely dissolved in an hour. This shows clearly that the protective influence has nothing to do with tissues as living tissues, or to the organism as a whole ; as the clear expressed juice of the animal is protective for fibrin against the proteolytic ferments in a digest. This extract may prevent digestion of the fibrin for more than fourteen days ; the expressed juice, if treated with 1 to 2 per cent. of sodium fluoride was found to be active after eight months. A second extract, to which a little common salt and disodium phosphate were added, was even more effective than the first. If the "juice" is boiled, its protective action is destroyed. Heating for ten minutes to 60° C. does not materially affect its activity, but when heated to 80° C. for ten minutes there is a very great diminution in its protective power. Thus the substance, whatever it is, has a

relatively high resistance to heat. The protective action seems to be due to substances which have a greater or less effect in inhibiting the action of ferments, and they have been called "antiferments." If the extract be kept warm a precipitate forms. This contains none of the active substance. The latter is contained in the clear filtrate. From this a substance can be precipitated by alcohol which posessess the anti-fermentative action of extract of ascaris, and this applies both to tryptic and peptic digestion. Most probably there are two substances, one antipeptic and the other antitryptic in its action. It would seem that ferment and antiferment may exist side by side in a mixture for a long time, and that the latter does not destroy the former, but only inhibits its action. The substances, whatever they are, are probably pretty closely and intimately connected with the cells, but with which of the cellular constituents is not proved. Fibrin impregnated with the expressed juice behaves like "living" tissue in resisting the action of proteolytic ferments. The net outcome of these experiments seem to be to show that the parasitic worms living in the stomach, intestine, peritoneal tissue, liver, etc., are protected from proteolytic action by the presence of specific "antiferments," and that these substances can be precipitated by alcohol without losing their protective influence. This is a very material advance in our knowledge, for it shows us that the explanation of some of the most difficult problems is to be sought along the lines of chemical research.—*B.M.J.*

ROYAL COMMISSION ON HORSE BREEDING.

The ninth report of this Commission has been presented to His Majesty, and was issued on July 30th as a Parliamentary paper (Cd. 1678). The Commissioners, who were appointed to dispose of the money granted by Parliament for the encouragement of horse breeding in Great Britain, are able to state that since the presentation of the preceding report two years ago the number of stallions competing in the district classes is satisfactory and that the quality of the exhibits remains good. In confirmation of this the reports of the judges at the last two shows are embodied in the report, which goes on to say that the Commissioners have considered whether it is desirable to give the judges any account of the racing careers of the horses exhibited. Hitherto, the animals were judged merely upon their merits, and the judges have been given no information beyond their age and height, but the Commissioner considers that if a horse has been through a course of training, has remained sound, and shown merit in his performances, either in racing or steeplechasing, these facts should be made known to the judges.

The table showing the services of the premium stallions in 1901 and 1902 is of much interest, but it cannot be described as altogether satisfactory, as the total was 1568 in 1901 and 1396 in 1902, while in 1900 and 1899 it had been 1546 and 1501. Another table gives the list of prizes won by the progeny of premium stallions at the different summer shows at which medals are awarded by the Hunters' Improvement Society for the last five years, and there has been a steady increase from 283 in 1898 to 406 in 1901. Although the total for 1902 is only 355 the falling off is but apparent, because in that year the reserve numbers, which were as many as 82 in 1901, ceased to be included in the list. In the five years covered by this list, the progeny of premium stallions have won 23 champion and challenge prizes, and over 600 first prizes, to say nothing of minor honours. This is, perhaps, the best evidence that can be had as to the good work which the Royal Commission is doing. It is satisfactory also to find that the number of stallions rejected by the veterinary inspectors, at the spring show in London, for hereditary unsoundness is once more on the decrease. In 1898 only three of the 49 sent out for veterinary inspection were rejected, and four out of 45 in 1899, but nine were rejected out of 58 in 1900, and 12 out of 55 in 1901. Last year there was a slight improvement, as 11 out of 61 failed to pass, while this year there is a further improvent, for out of 55 examined only seven were cast.—*The Times.*

PROSECUTION BY THE R.C.V.S.

Frederick Emerson Thomas, farrier, Llandilo, and formerly of the Rhondda Valley, was summoned at the instance of the Royal College of Veterinary Surgeons, under Section 17 of the Veterinary Surgeons Act, 1881 and 1883, for using a name, title, addition or description, stating that he was a qualified veterinary surgeon.

Mr. Powell, solicitor, prosecuted, and Mr. Claude Davies, solicitor, defended.

Mr. T. H. Powell read out the Section of the Act dealing with the offence, and pointed out that it proved a penalty not exceeding £20.

Mr. Claude Davies pleaded guilty on behalf of his client.

Thomas Boyd. Talley Road, Llandilo, said that he had been authorised by the R.C.V.S., to prosecute in that case. On a sign outside defendant's house there was a picture of a horse in a sling, and underneath the words, "Fred. E. Thomas, late Walter Williams, M.R.C.V.S."

Mr. Powell said that was sufficient for his case, as a case had been decided on that point where a blacksmith described himself as a veterinary smith. The College was not anxious to be vindictive, but they thought that could not and should not be allowed to go on throughout the country. It was deceiving the public. When his friend admitted the fact the College authorities wrote stating that if he would give an undertaking not to repeat the offence they would be satisfied with a small fine. They simply wished to prevent unqualified persons from holding themselves out as a qualified persons.

Mr. Claude Davies pointed out that the Act was only of recent date, and had provided that gentlemen in practice as farriers for ten years prior to the passing of the Act could be admitted as veterinary surgeons. Now it was an offence to let the public suppose they were veterinary surgeons when they were not, and he pleaded in this case the offence was only a technical one. The old sign was the sign used by the late Mr. Walter Williams, who was a qualified veterinary surgeon, and the only thing which Mr. Thomas had done was to put his name in front of it. It had since been taken away. When his friend showed him the evidence to be adduced he felt it his duty to advise his client to plead guilty to a technical offence. It was not an offence to carry on the work of a farrier, and he was summoned because he innocently and with no intention of fraud, put his name on that sign, so as to allow people to think he was a member of the R.C.V.S. He did not try in any other way to deceive the public. He had had 12 or 13 years experience as a farrier. He was with a chemist in Cardiganshire who carried on the business of a farrier. He had 96 horses under his care in one colliery, 110 in another, and so on. He held various appointments in the Rhondda Valley for seven years before coming to Llandilo. He would call veterinary surgeons who would say that as a farrier he was a very capable and skilful man. He did not wish to deceive anybody.

The Chairman: How long has the sign been up?

Mr. Claude Davies: Only for eight months. He had been at Llandilo for ten months, but only added his name two months after coming there.

The Chairman said that the defendant had pleaded guilty to a very serious offence, viz., that of claiming to

be what he was not. It was a great fraud on the public. They thought they were calling in a qualified man, but they were not. They were deceived in that, and got advice from a man who was not properly qualified. The public must be protected. If it had not been for the letter from the College—he did not agree with the letter, as he had very strong views with regard to unqualified men practising at all—he would have been severely punished, but under the circumstances he would be fined the mitigated sum of £2 and costs. Advocate's fee was also allowed.—*The Carmarthen Journal.*

THE ROYAL VETERINARY COLLEGE OF IRELAND.

Annual Distribution of Medals.

(Continued from p. 78).

Sir Christopher Nixon, President of the College, who was loudly applauded, said the report which they had just listened to was gratifying evidence of the steady progress made by the College since its opening three years ago. They had 90 students on the College books, so that next year in which students of the fourth year would be represented, they hoped the number would reach the century. It is highly creditable to the teaching staff that the percentage of passes in the three professional examinations has been so high, and the Governors have reason to congratulate themselves in having a zealous and energetic Principal and a thoroughly efficient staff of Professors and Lecturers. (App.) It is true that as yet the College buildings and equipment are in an inchoate condition. We are in want of a properly equipped chemical department, a well-furnished museum and library, and a boardroom. We are still obliged to avail ourselves of the unfailing consideration and courtesy of the Royal Dublin Society for accommodation when it is necessary that the Governors should meet. It may not be too sanguine to express a hope that at our next distribution of prizes this great national institution will be, in all respects, adequately equipped for the functions it undertakes to discharge. It is in connection with one of those functions that we are assembled here. The primary object of the College is to educate members of the veterinary profession, and one of the stages in our system of education is reached to-day when I have the honour and the privilege to preside at this, our first, distribution of prizes. I desire to express upon the part of the Governors of the College our warm congratulations to the recipients of the prizes which they have gained in honourable competition. We hope that these distinctions are but a prelude to greater distinctions and successes. The attainment of these honours represents successful work in one stage of your journey, and in the competition in which you have been engaged you have a foretaste of what awaits you in the future. I cannot too strongly impress upon you, professional students, that in this present age of keen and discriminating competition, it is only those who are well trained and work, not in fitful starts, but earnestly, thoroughly and with continuity, who will reach and maintain a high order of professional success. Your professional examinations appear to me to be searching, and of a sufficiently high standard of excellence such as will, I hope, shut out the drones and extend only to the toilers the palm of which they are worthy. There appears to be no attempt to pass by piecemeal, or by any vicious system of compensation, disadvantageous alike to the public, the State, and the profession.

As this is our first academic meeting I may avail myself of the opportunity of pointing out the other objects of a veterinary College. I have just touched upon its educational function, but it subserves a function of vital importance to a country like Ireland in its close relation with all matters affecting the health and disease of its live stock. The College is, as you are all aware, very closely connected with the Agricultural Board of the Department of Agriculture and Technical Education for Ireland. This Board, in protection of its own interests, nominates 13 out of 40 governors of the Veterinary College, 12 others being appointed directly by the Crown. It is the Board of Agriculture from which we have obtained financial aid to help in completing our present buildings and equipments, and it is on this Board we must depend for the completion of the College. You may rely upon it that this body, which is so keenly interested in the future of agriculture in this country, will see that they get full value for money they expend, and I think both the Department and the College are fortunate in the fact that when the Department came into existence the College had entered upon its first year of life, so that a provision, in uniform existence in great Continental countries, was for the first time created in the United Kingdom of having a veterinary College associated with a Department of Agriculture. The association has been fully availed of. The services of our Principal, Professor Mettam, have been frequently requisitioned not alone in Dublin, but throughout the country. He has ably assisted Professor Nocard in the investigation which, at the request of the Department, was held in connection with calf mortality in Ireland, an investigation which, I understand, promises most satisfactory results. Furthermore, the College has been utilised by the Department for the training of Agricultural students who attend courses of lectures delivered in it, and the services of the Principal and of the College staff will be always available in the investigation of any local or general outbreak of infectious diseases occurring amongst the domestic animals. As evidence of what importance in agricultural countries it is that the closest attention should be paid to condition of diseases in animals, both as regards prevention and treatment I may mention a few well-known facts. In the course of 30 years, from the ravages of pleuro-pneumonia and foot-and-mouth disease, property of the value of over £83,500,000 was destroyed in the United Kingdom, and in the decade of 1856-66 the loss from cattle plague reached to more than £7,000,000. Swine fever, which unfortunately still prevails in Ireland, has cost this country for the quinquennial period ending 1902 over £76,000. the return from last year's expenditure being £14,616. On the favourable side it should be noted that foot-and-mouth disease has been extirpated ; glanders may be said to have disappeared from civilian stables, and rabies, at a comparatively small expenditure, has ceased to exist in the United Kingdom. It remains to be seen what the joint investigation by pathologists in human and veterinary medicine will effect upon the burning question of human and bovine tuberculosis. I may venture to express a hope that our College here may lead the van in the progress of the treatment of infectious diseases occurring in animals. Great workers like Nocard, Arloing, Bang, and those who I trust will develop at home, following the lead of Pasteur, Koch, and others, will doubtless unravel the dark problems which surround the processes of infection and immunity. Very closely related to this question of immunity is the only other object of a Veterinary College upon which I may say a word—namely, the relation which it has with research work, which will not alone accentuate the usefulness of veterinary medicine as a science and an art, but will materially aid in raising the tone and status of the veterinary profession. It would not be difficult to show how much the study of veterinary pathology and physiology has influenced the progress of human medicine. Many of the diseases which are communicable from animals to man can only be studied thoroughly from the veterinarian side as well as from that of human medicine. Questions in connection with immunity and the action of toxins and antitoxins—agents that will play so vital a

relatively high resistance to heat. The protective action seems to be due to substances which have a greater or less effect in inhibiting the action of ferments, and they have been called "antiferments." If the extract be kept warm a precipitate forms. This contains none of the active substance. The latter is contained in the clear filtrate. From this a substance can be precipitated by alcohol which posessess the anti-fermentative action of extract of ascaris, and this applies both to tryptic and peptic digestion. Most probably there are two substances, one antipeptic and the other antitryptic in its action. It would seem that ferment and antiferment may exist side by side in a mixture for a long time, and that the latter does not destroy the former, but only inhibits its action. The substances, whatever they are, are probably pretty closely and intimately connected with the cells, but with which of the cellular constituents is not proved. Fibrin impregnated with the expressed juice behaves like "living" tissue in resisting the action of proteolytic ferments. The net outcome of these experiments seem to be to show that the parasitic worms living in the stomach, intestine, peritoneal tissue, liver, etc., are protected from proteolytic action by the presence of specific "antiferments," and that these substances can be precipitated by alcohol without losing their protective influence. This is a very material advance in our knowledge, for it shows us that the explanation of some of the most difficult problems is to be sought along the lines of chemical research.—*B.M.J.*

ROYAL COMMISSION ON HORSE BREEDING.

The ninth report of this Commission has been presented to His Majesty, and was issued on July 30th as a Parliamentary paper (Cd. 1678). The Commissioners, who were appointed to dispose of the money granted by Parliament for the encouragement of horse breeding in Great Britain, are able to state that since the presentation of the preceding report two years ago the number of stallions competing in the district classes is satisfactory and that the quality of the exhibits remains good. In confirmation of this the reports of the judges at the last two shows are embodied in the report, which goes on to say that the Commissioners have considered whether it is desirable to give the judges any account of the racing careers of the horses exhibited. Hitherto, the animals were judged merely upon their merits, and the judges have been given no information beyond their age and height, but the Commissioner considers that if a horse has been through a course of training, has remained sound, and shown merit in his performances, either in racing or steeplechasing, these facts should be made known to the judges.

The table showing the services of the premium stallions in 1901 and 1902 is of much interest, but it cannot be described as altogether satisfactory, as the total was 1568 in 1901 and 1396 in 1902, while in 1900 and 1899 it had been 1546 and 1501. Another table gives the list of prizes won by the progeny of premium stallions at the different summer shows at which medals are awarded by the Hunters' Improvement Society for the last five years, and there has been a steady increase from 283 in 1898 to 406 in 1901. Although the total for 1902 is only 355 the falling off is but apparent, because in that year the reserve numbers, which were as many as 82 in 1901, ceased to be included in the list. In the five years covered by this list, the progeny of premium stallions have won 23 champion and challenge prizes, and over 600 first prizes, to say nothing of minor honours. This is, perhaps, the best evidence that can be had as to the good work which the Royal Commission is doing. It is satisfactory also to find that the number of stallions rejected by the veterinary inspectors, at the spring show in London, for hereditary unsoundness is once more on the decrease. In 1898 only three of the 49 sent out for veterinary inspection were rejected, and four out of 45 in 1899, but nine were rejected out of 58 in 1900, and 12 out of 55 in 1901. Last year there was a slight improvement, as 11 out of 61 failed to pass, while this year there is a further improvent, for out of 55 examined only seven were cast.—*The Times.*

PROSECUTION BY THE R.C.V.S.

Frederick Emerson Thomas, farrier, Llandilo, and formerly of the Rhondda Valley, was summoned at the instance of the Royal College of Veterinary Surgeons, under Section 17 of the Veterinary Surgeons Act, 1881 and 1883, for using a name, title, addition or description, stating that he was a qualified veterinary surgeon.

Mr. Powell, solicitor, prosecuted, and Mr. Claude Davies, solicitor, defended.

Mr. T. H. Powell read out the Section of the Act dealing with the offence, and pointed out that it proved a penalty not exceeding £20.

Mr. Claude Davies pleaded guilty on behalf of his client.

Thomas Boyd. Talley Road, Llandilo, said that he had been authorised by the R.C.V.S., to prosecute in that case. On a sign outside defendant's house there was a picture of a horse in a sling, and underneath the words, "Fred. E. Thomas, late Walter Williams, M.R.C.V.S."

Mr. Powell said that was sufficient for his case, as a case had been decided on that point where a blacksmith described himself as a veterinary smith. The College was not anxious to be vindictive, but they thought that could not and should not be allowed to go on throughout the country. It was deceiving the public. When his friend admitted the fact the College authorities wrote stating that if he would give an undertaking not to repeat the offence they would be satisfied with a small fine. They simply wished to prevent unqualified persons from holding themselves out as a qualified persons.

Mr. Claude Davies pointed out that the Act was only of recent date, and had provided that gentlemen in practice as farriers for ten years prior to the passing of the Act could be admitted as veterinary surgeons. Now it was an offence to let the public suppose they were veterinary surgeons when they were not, and he pleaded in this case the offence was only a technical one. The old sign was the sign used by the late Mr. Walter Williams, who was a qualified veterinary surgeon, and the only thing which Mr. Thomas had done was to put his name in front of it. It had since been taken away. When his friend showed him the evidence to be adduced he felt it his duty to advise his client to plead guilty to a technical offence. It was not an offence to carry on the work of a farrier, and he was summoned because he innocently and with no intention of fraud, put his name on that sign, so as to allow people to think he was a member of the R.C.V.S. He did not try in any other way to deceive the public. He had had 12 or 13 years experience as a farrier. He was with a chemist in Cardiganshire who carried on the business of a farrier. He had 96 horses under his care in one colliery, 110 in another, and so on. He held various appointments in the Rhondda Valley for seven years before coming to Llandilo. He would call veterinary surgeons who would say that as a farrier he was a very capable and skilful man. He did not wish to deceive anybody.

The Chairman: How long has the sign been up?

Mr. Claude Davies: Only for eight months. He had been at Llandilo for ten months, but only added his name two months after coming there.

The Chairman said that the defendant had pleaded guilty to a very serious offence, viz., that of claiming to

be what he was not. It was a great fraud on the public. They thought they were calling in a qualified man, but they were not. They were deceived in that, and got advice from a man who was not properly qualified. The public must be protected. If it had not been for the letter from the College—he did not agree with the letter, as he had very strong views with regard to unqualified men practising at all—he would have been severely punished, but under the circumstances he would be fined the mitigated sum of £2 and costs. Advocate's fee was also allowed.—*The Carmarthen Journal.*

THE ROYAL VETERINARY COLLEGE OF IRELAND.

Annual Distribution of Medals.

(Continued from p. 78).

Sir Christopher Nixon, President of the College, who was loudly applauded, said the report which they had just listened to was gratifying evidence of the steady progress made by the College since its opening three years ago. They had 90 students on the College books, so that next year in which students of the fourth year would be represented, they hoped the number would reach the century. It is highly creditable to the teaching staff that the percentage of passes in the three professional examinations has been so high, and the Governors have reason to congratulate themselves in having a zealous and energetic Principal and a thoroughly efficient staff of Professors and Lecturers. (App.) It is true that as yet the College buildings and equipment are in an inchoate condition. We are in want of a properly equipped chemical department, a well-furnished museum and library, and a boardroom. We are still obliged to avail ourselves of the unfailing consideration and courtesy of the Royal Dublin Society for accommodation when it is necessary that the Governors should meet. It may not be too sanguine to express a hope that at our next distribution of prizes this great national institution will be, in all respects, adequately equipped for the functions it undertakes to discharge. It is in connection with one of those functions that we are assembled here. The primary object of the College is to educate members of the veterinary profession, and one of the stages in our system of education is reached to-day when I have the honour and the privilege to preside at this, our first, distribution of prizes. I desire to express upon the part of the Governors of the College our warm congratulations to the recipients of the prizes which they have gained in honourable competition. We hope that these distinctions are but a prelude to greater distinctions and successes. The attainment of these honours represents successful work in one stage of your journey, and in the competition in which you have been engaged you have a foretaste of what awaits you in the future. I cannot too strongly impress upon you, professional students, that in this present age of keen and discriminating competition, it is only those who are well trained and work, not in fitful starts, but earnestly, thoroughly and with continuity, who will reach and maintain a high order of professional success. Your professional examinations appear to me to be searching, and of a sufficiently high standard of excellence such as will, I hope, shut out the drones and extend only to the toilers the palm of which they are worthy. There appears to be no attempt to pass by piecemeal, or by any vicious system of compensation, disadvantageous alike to the public, the State, and the profession.

As this is our first academic meeting I may avail myself of the opportunity of pointing out the other objects of a veterinary College. I have just touched upon its educational function, but it subserves a function of vital importance to a country like Ireland in its close relation with all matters affecting the health and disease of its live stock. The College is, as you are all aware, very closely connected with the Agricultural Board of the Department of Agriculture and Technical Education for Ireland. This Board, in protection of its own interests, nominates 13 out of 40 governors of the Veterinary College, 12 others being appointed directly by the Crown. It is the Board of Agriculture from which we have obtained financial aid to help in completing our present buildings and equipments, and it is on this Board we must depend for the completion of the College. You may rely upon it that this body, which is so keenly interested in the future of agriculture in this country, will see that they get full value for money they expend, and I think both the Department and the College are fortunate in the fact that when the Department came into existence the College had entered upon its first year of life, so that a provision, in uniform existence in great Continental countries, was for the first time created in the United Kingdom of having a veterinary College associated with a Department of Agriculture. The association has been fully availed of. The services of our Principal, Professor Mettam, have been frequently requisitioned not alone in Dublin, but throughout the country. He has ably assisted Professor Nocard in the investigation which, at the request of the Department, was held in connection with calf mortality in Ireland, an investigation which, I understand, promises most satisfactory results. Furthermore, the College has been utilised by the Department for the training of Agricultural students who attend courses of lectures delivered in it, and the services of the Principal and of the College staff will be always available in the investigation of any local or general outbreak of infectious diseases occurring amongst the domestic animals. As evidence of what importance in agricultural countries it is that the closest attention should be paid to condition of diseases in animals, both as regards prevention and treatment I may mention a few well-known facts. In the course of 30 years, from the ravages of pleuro-pneumonia and foot-and-mouth disease, property of the value of over £83,500,000 was destroyed in the United Kingdom, and in the decade of 1856-66 the loss from cattle plague reached to more than £7,000,000. Swine fever, which unfortunately still prevails in Ireland, has cost this country for the quinquennial period ending 1902 over £76,000. the return from last year's expenditure being £14,616. On the favourable side it should be noted that foot-and-mouth disease has been extirpated ; glanders may be said to have disappeared from civilian stables, and rabies, at a comparatively small expenditure, has ceased to exist in the United Kingdom. It remains to be seen what the joint investigation by pathologists in human and veterinary medicine will effect upon the burning question of human and bovine tuberculosis. I may venture to express a hope that our College here may lead the van in the progress of the treatment of infectious diseases occurring in animals. Great workers like Nocard, Arloing, Bang, and those who I trust will develop at home, following the lead of Pasteur, Koch, and others, will doubtless unravel the dark problems which surround the processes of infection and immunity. Very closely related to this question of immunity is the only other object of a Veterinary College upon which I may say a word—namely, the relation which it has with research work, which will not alone accentuate the usefulness of veterinary medicine as a science and an art, but will materially aid in raising the tone and status of the veterinary profession. It would not be difficult to show how much the study of veterinary pathology and physiology has influenced the progress of human medicine. Many of the diseases which are communicable from animals to man can only be studied thoroughly from the veterinarian side as well as from that of human medicine. Questions in connection with immunity and the action of toxins and antitoxins—agents that will play so vital a

part in the future of our own species—must largely result from work done in both professions; hence veterinarians are not alone concerned with the future of their own profession, but they can justly claim the sympathy and warm support of members of my profession. (Applause.) It is in that spirit that I hold the office of President of the Royal Veterinary College of Ireland, and that I appreciate fully the honour which it confers on me. (Applause.) It is the same spirit which leads me to ask why a great, useful, and progressive profession like veterinary medicine should have no place in the curriculum of a University? Divinity. Law, Medicine, Engineering, and Music have their Baccalaureates and Doctorates; Agriculture has its Diploma and its Degree; the profession of teaching is granted a Diploma; and Commerce has its claim for consideration recognised. He believed in some German Universities they gave a diploma in brewing (Laughter.) Yet a profession which requires a reasonably high standard of preliminary education, enforces a four years' curriculum, and requires four examinations to be passed before students are granted the right to practice, has had up to the present, in this country, no University status or recognition. This anomalous position can, no doubt, be partially accounted for. In the veterinary profession there exists what many members of my own profession earnestly desire to see established, a one portal system of entrance to the profession. Every student must hold the licence of the Royal College of Veterinary Surgeons of London before being legally entitled to practise, and in this way the evil effects of rival licensing Corporations are done away with, whilst a uniform minimum standard of examination is maintained. (Hear, hear.) This, doubless, retarded any movement for the establishment of a University curriculum and Degrees in veterinary medicine. Now, however, both in Ireland and in Scotland a move is being made in this direction, and I am quite sanguine as to its successful issue. In this matter I wish my own position and that of the Governors of the College to be made perfectly clear. When the establishment of this College was under consideration the question was at once raised as to whether or not we should seek powers to grant our own Licence, and I had charge of the negotiations in reference to this with the Royal College of Veterinary Surgeons in London. The position taken by the promoters of this College was that they desired it to be in identically the same relation to the Licensing Body as the Colleges in Edinburgh, Glasgow, and London, and upon this understanding we received the warm support of the Licensing Body. From that position I believe the Governors of this College will not deviate by a hair's breadth. Personally I feel strongly that it would be most prejudicial to the interests of the profession to disturb in any way its one portal system. But I may point out that the establishment of a University curriculum and Degrees in Veterinary Medicine would in no way affect, as regards admission to the Veterinary Register, the status quo. The Veterinary Degree of a University should not confer any right to practice, and a provision should be made by which the Degree would only be conferred upon those who held the Licence of the Royal College of Veterinary Surgeons. In other words the present examination for the Licence should hold the position of a Staats Examen, the passing of which alone confers the right to registration and practice. It may be that comparatively few would seek University Degrees in Veterinary Medicine, but for those whose habits of life and disposition determine them to scientific work, and who desire to become teachers, a University Degree would bring invaluable aid, whilst its existence secures for veterinary medicine the academic status to which it is so justly entitled. (App.)

Mr. T. P. Gill congratulated the College on the remarkable progress it had achieved in so short a time, and begged to testify the interest which the Department of Agriculture took in that institution.

Sir Charles Cameron proposed a vote of thanks to the President, Sir Christopher Nixon.

Very Rev. Dr. Delany, in seconding the vote, said more to the President than any other man was due the foundation of that College. With "the doggedness that does it," the President combined intelligence and character, and was therefore sure of success in any cause he took up, no matter how hopeless it looked. (App.)

The vote was carried by acclamation.

The President having replied, the proceedings terminated.—*Freeman's Journal.*

DISEASES OF ANIMALS ACTS 1894 & 1896.

Summary of Returns, Week Ending August 1, 1903.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies.		Swine Fever.	
							Cases Confirmed.			
	Outbreaks.	Animals Attacked.	Outbreaks.	Animals Attacked.	Outbreaks.	Animals Attacked.	Dogs.	Other Animals.	Outbreaks.	Slaughtered as Diseased or Exposed to Infection
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Week ended August 1, 1903 ..	9	11	..	..	33	49	..	..	35	131
Corresponding week in 1902 ..	8	10	..	..	14	26	..	..	36	132
Corresponding week in 1901 ..	8	11	..	..	29	39	..	..	51	206
Corresponding week in 1900 ..	7	17	1	12	17	34	..	..	32	206
Total for 31 weeks, 1903	490	765	..	..	864	1407	..	..	1014	4,990
Corresponding period in 1902 ..	434	706	1	120	684	1232	12	11	1,107	5,062
Corresponding period in 1901 ..	399	562	12	669	796	1350	1	1	2,491	12,104
Corresponding period in 1900 ..	342	579	10	135	651	1113	..	..	1,402	14,252

Note.—The figures for the Current Year are approximate only.

Board of Agriculture, August 4th, 1903.

WHAT ARE "REASONABLE" FEES?

At Marylebone County Court last Friday, before Deputy Judge Fitzroy Cowper, Mr. William James Arkcoll, M.R.C.V.S., 134 Queen's Road, Bayswater, W., brought an action against Mr. Henry Pfungst, 44 Cleveland Square, W., claiming £6 6s. in respect of professional attendance upon a cat. The defendant had paid £3 into court.

Mr. J. C. Clay, solicitor, appeared for the plaintiff, and Mr. A. Williams, solicitor, for the defence.

The plaintiff stated that in February last he was called in to see defendant's cat which was very old ; had abscesses in both ears and an ulcerated throat. Subsequently he had the cat under his care for more than a fortnight, operating for the abscesses, applying fomentations and lotions, dressing the wounds and administering whiskey and medicines.

The defendant remarked that he did not object in any way to the treatment of the cat, but he considered that the plaintiff's charges were "most excessive."

The Judge: There was no agreement as to what the charges should be?

Plaintiff: None whatever.

His Honour: Then the question for me to decide will be whether these charges are reasonable or not.

The plaintiff: These charges would be considered quite ordinary in the profession. People do not understand what a lot of trouble there is in attending such cases ; and I am not surprised that they should sometimes think the bills rather high.

The Judge: Then, you have had other objections of this kind?

Plaintiff: Yes, people do not know the risk we run in giving medicines to these cats, and the trouble we have in treating them. The plaintiff added that he had attended defendant's cats on two former occasions, and had charged at exactly the same rate, but the other cases were not so serious as the one in question.

The defendant remarked that the former bills were paid by his wife and daughter ; but he maintained that if excessive bills had previously been paid these payments should not be taken as precedents in regard to other excessive charges.

Mr. Arthur Henry Jacobs, M.R.C.V.S., 2 Upper Park Place, Baker Street, said he examined the plaintiff's account, and, considering the character of the case, he did not think the charges exorbitant at all. Witness added that he had been in practice for over twenty-five years.

Defendant's Solicitor: Wouldn't you think it right to give a client an idea of your charges before undertaking such a case?

Witness: Certainly not, you never do that unless asked to do so.

What do you charge in the ordinary way for keeping and attending a cat?—Sometimes 10s. a week ; sometimes 15s. ; and sometimes more.

And sometimes 5s.?—No, I have never charged so low, even for taking care of a cat, without treatment.

Mr. Thomas Moore, M.R.C.V.S., Chilworth Street, W., said he considered the plaintiff's charges in the present case quite reasonable.

In answer to the Judge, witness said he had been in the profession for about thirty years, and had attended a great many cats.

The defendant said that the cat in question must have been quite fifteen years old, and his suggestion to the plaintiff was that the animal should be put out of the way. Mr. Arkcoll, however, said he thought he could benefit the cat, but when he returned the animal it appeared half starved, and was certainly no better than when taken away. Witness then sent the cat to another veterinary surgeon—Mr. S. Broad—and it was after receipt of his account that witness decided to dispute the plaintiff's charges.

In answer to the Judge, defendant said that Mr. Broad's account came to only £2 2s.

Plaintiff remarked that Mr. Broad had no occasion to attend the cat's ears, or to operate upon the animal.

Mr. Sidney S. Broad, M.R.C.V.S.. Craven Terrace, W., etc., said that when asked his opinion about the plaintiff's charges in question he replied that he would not pay so much. He considered that 7s. a week was sufficient to charge for professional attendance on a cat in the ordinary course. For attending the cat in question he had charged 14s. a week, but the extra 7s. was in accordance with agreement for special food, including oysters. If veterinary surgeons generally charged so much as six guineas a fortnight for attending a cat, very few cats, he thought, would be sent to them. Witness went on to say that he saw nothing of abscesses in the cat's ears but only canker.

In cross-examination, witness said he had been in practice for about twelve years. He volunteered the amount of his fees when the cat was first brought to him. He had never known of abscesses on a cat's ears, unless little cysts on the flap of the ear might be termed abscesses.

His Honour: I have to go mainly on the professional evidence, and the conclusion I come to is that the plaintiff's charges—or some of them, at least—are excessive. There is no agreement as to price, and I have to say what I consider would be reasonable charges in this case. On the whole, I think that if I allow four guineas I shall be giving the plaintiff a liberal amount. There will be judgment for the plaintiff for four guineas, with costs.

PARLIAMENTARY.

Remounts.

In the House of Commons on Monday, Aug. 3rd.

On the vote for £1,838,000 for transport and remounts,

Sir C. Dilke called attention to the small establishment of horses. The number of horses per squadron was smaller in our Army than in any other army in the world.

Mr. Brodrick agreed with the right hon. baronet, but said he was in the hands of the military authorities, who said they got all the horses they could manage, considering the work the men had to do. If the War Office gave them all they wanted they could do no more.

Sir C. Dilke: There is no cavalry in the world with so small a proportion of horses.

Mr. Brodrick: There is something peculiar about the British Army in many ways. (Ironical cheers). In most ways it spends more than any army in the world. In this case it spends less.

Major Seely (Isle of Wight) thought the right hon. gentleman should take this criticism more seriously to heart.

Mr. Brodrick said the present supply of horses was adequate to mount the men and take them into the field. He was in full agreement with his hon. friend, and he could assure him it was not a question of parsimony, but whether he should dictate to the War authorities to keep a larger number of horses than they wanted to keep.—*The Times.*

Personal.

On Saturday last Mr. T. D. Lambert, F.R.C.V.S., who acted as veterinary surgeon to the Royal Stud during Their Majesties' stay in Dublin, had the honour of being presented with a beautiful diamond pin, a special gift from His Majesty the King.—*Irish Times.*

Dublin University and Veterinary Medicine.

At a meeting of the Senate of the Royal Dublin University, on July 31st, the Earl of Meath, Chancellor of the University, in the chair; W. A. M'Keown, M.D., His Honour Judge Shaw, M.A., LL.D., Sir Christopher Nixon, M.D., LL.D., Rev. Thomas Hamilton, D.D., L.L.D., John R. Leebody, M.A., D.Sc., Rev. N. M'A. Brown, D.D., LL.D., Sir Henry Bellingham, Bart., M.A.; Sir James Creed Meredith, and Dr. Joseph M'Grath, secretaries.

"On the motion of Sir Christopher Nixon, seconded by Judge Shaw, it was unanimously resolved:—'That the Senate considers that veterinary medicine is entitled to have its claims for University status recognised by the University, and that the Standing Committee be requested to take such steps as it may deem necessary to carry out this object.'"—*The Irish Times.*

A Good Example.

At the usual meeting of the Central Veterinary Medical Society of France, held on July 9th, the Secretary read a letter from the Minister of Agriculture informing the Society that he had authorised a grant to it of 4,750 francs. (£190.)

The President (M. Railliet) moved that a letter of thanks be sent to the Minister of Agriculture for this liberality, the grant being 750 francs more than the last given.—(*Recueil de Médecine Vétérinaire*, 30 Juillet, 1903).

[They certainly manage things better on the Continent and yet we hold up our hands, rub our eyes, and wonder why in trade, manufactures, and technical education we are beaten out of the field by foreigners. We heard many platitudes uttered by the representative of the Board of Agriculture at the annual dinner of the Royal College of Veterinary Surgeons, and here is a chance to put the good wishes expressed into practical form by following the example of his French *confrère*. The feeling of the Government towards the veterinary profession at present brings home to us the old couplet—Sympathy without relief Is like to mustard without beef.]

ARMY VETERINARY DEPARTMENT.

Extract from *London Gazette*,

WAR OFFICE, PALL MALL, August 4.

The undermentioned officers of the Australian Commonwealth Horse are granted temporary rank in the Army whilst serving in South Africa as follows:—To be Veterinary-Lieutenants: 1st. Batt., Vet.-Lieut. E. Barbeta, Vet. Officer; 2nd Batt., Vet.-Lieut. B. B. Loel, Vet. Officer; To be Veterinary-Captain: 3rd Batt., Vet.-Capt. J. B. Leitch, Vet. Officer; To be Veterinary-Lieutenants: 4th Batt., Vet.-Lieut. D. T. Jones, Vet. Officer; 6th Batt., Vet.-Lieut. A. C. Wilson, Vet. Officer; To be Veterinary-Captain: 7th Batt., Vet.-Capt. J. McLeod, Vet. Officer.

CORRESPONDENCE.

VETERINARY SURGEONS & REMOUNT WORK.

Sir,

In an issue of *The Veterinary Record* not long ago you, after criticising Mr. Brodrick's remarks as "absurd and insulting" go on to say "it is beyond dispute that the training given to a veterinary surgeon affords a basis of judgment for selecting horses possessed by no other class of men."

To give proof of the correctness of your statement, if such were necessary, it may interest some of your readers to know that there is a race in India for a valuable cup known as the Punjab Army Cup, and that this race is open to the whole Army in India, the main condition of the race being that no horse competing for the cup shall be bought for a sum exceeding Rs. 600 (£40) the object of course being to bring the race within the reach of all.

The race, which is open to Arabs and country-breds only, is run over a two mile course, Arabs 14·1 to carry 13 stone, countrybreds 14·1 to carry 12-4. There are two steep ascents in the course, and it is obvious that with such weights up it requires a pony with a certain amount of breeding and stamina to stay the course. The price being strictly limited the picking out of a winner becomes a matter of judgment rather than purse. The race has been run four times. What is the result?

1st year:	Mr. Wood's (A.V.D.) "Ruddigore"	1st
2nd year:	Major Sykes (I.M.S.)	1st
3rd year:	Capt. Walker's (A.V.D.) "Dr. Syntax"	1st
	Mr. McGowan's (A.V.D.) "Atbara"	2nd
	Mr. McGowan's (A.V.D.) "Ajax"	3rd
4th year:	Capt. Sullivan's (A.V.D.) "Lotus"	1st

It will be readily seen that when the selection of a horse becomes a matter of judgment rather than purse the veterinary surgeon is not such a fool as Mr. Brodrick would have us believe. Where is his combatant officer here? Though the race is open to the whole British and Indian Army the only man who divides the honour with us is a doctor. Further comment is, I think, unnecessary. I may add that the cup is won outright every year, and that three are now the property of veterinary surgeons.

M.R.C.V.S.

"OUR FRIENDS AND OUR ENEMIES."

Sir,

May I be permitted to correct the statement made in the leading article of *The Veterinary Record* of the 1st inst. in which it is stated that Sergeant-Major Fenton has been appointed a Lieutenant in the Army Veterinary Department, as it is calculated to give rise to a wrong impression.

In *The London Gazette* Sergt.-Major Fenton was gazetted a *Quartermaster* in the Army with the *honorary* rank of Lieutenant, and not as a Veterinary-Lieutenant in the A.V.D., in which he will simply have charge of stores and be in a position similar to 69 Quartermasters of the Royal Army Medical Corps who are honorary lieutenants or captains in the Army.—Believe me, yours very truly,

H. THOMSON,
Aug. 8th, 1903. Director-General, A.V.D.

Sir,

I have read with interest your leading article "Our Friends and Our Enemies" in *The Record* of August 1st, and particularly the concluding words "mind how you vote."

I believe every concession—the Veterinary Surgeons Act and various Charters, as well as whatever improvements have been granted to the Army Veterinary Department, with the exception of the wretched abortive Warrant of March, 1902, have all been given by a liberal Ministry.

Although we differ in politics we should remember that "charity commences at home" and although we cannot expect men to change their party at least they might be loyal to their profession, and abstain from assisting to again put into power an arrogant clique who have deliberately gone out of their way to insult us, as, for instance, the ignoring the heads of the profession, both civil and military, in the distribution of the Coronation honours.

I trust I am a patriotic Englishman, but I have fully made up my mind *not* to vote for the present Government candidate at the coming election, even in the event of my not feeling justified in giving my vote to the other party.

DISGUSTED.